

WHAT IS CLAIMED IS:

1. A computer-readable storage medium containing a computer system management program for managing a computer system having a storage apparatus and for causing a computer to execute steps of:

creating a storage volume in the storage apparatus according to a parameter indicating a characteristic of the storage volume;

deciding a threshold value associated with performance information indicating performance of the storage volume;

acquiring the performance information indicating the performance of the storage volume of the storage apparatus; and

comparing the performance information to the threshold value and detecting a threshold value violation.

2. The storage medium according to claim 1, wherein the medium contains a program causing a computer to execute further a step of notifying a warning when the threshold value violation is detected.

3. The storage medium according to claim 2, wherein a message based on the parameter is added to the warning.

4. The storage medium according to claim 3, wherein the message includes a suggestion of use of a unit for improving the performance of the storage apparatus arranged in the storage apparatus.

5. The storage medium according to claim 4, wherein the step of deciding the threshold value decides the threshold value according to the information indicating the relationship between the parameter and the threshold value.

6. The storage medium according to claim 5, wherein the parameter indicating the characteristic of the storage volume includes at least one of a read/write ratio, a average I/O size, I/O wait time importance, and data transfer bandwidth importance.

7. The storage medium according to claim 6, wherein the threshold value includes at least one of a threshold value of average wait time, a threshold value of an average data transfer amount, and a threshold value of an average data transfer amount per wait time.

8. The storage medium according to claim 7, wherein the performance information indicating the performance of the storage region includes at least one of a read access average I/O size, an average data transfer amount per read access unit time, read access average processing wait time, an average number of read accesses per unit time, a write access average I/O size, an average data transfer amount per write access unit time, write access average processing wait time, and an average number of write accesses per unit time.

9. A computer system management method performed by a management computer for managing a computer system including a storage apparatus, the method comprising

steps of:

creating a storage volume in the storage apparatus according to a parameter indicating a characteristic of the storage volume;

deciding a threshold value associated with performance information indicating performance of the storage volume;

acquiring the performance information indicating the performance of the storage volume of the storage apparatus; and

comparing the performance information to the threshold value and detecting a threshold value violation.

10. A computer system management system for managing a computer system including a storage apparatus, the system comprising:

a unit for creating a storage volume in the storage apparatus according to a parameter indicating a characteristic of the storage volume;

a unit for deciding a threshold value associated with performance information indicating performance of the storage volume;

a unit for acquiring the performance information indicating the performance of the storage volume of the storage apparatus; and

a unit for comparing the performance information to the threshold value and detecting a threshold value violation.

11. The computer system management system according to claim 10, wherein a warning is notified when the threshold value violation is detected.

12. The computer system management system according to claim 11, wherein a message based on the parameter is added to the warning.

13. The computer system management system according to claim 12, wherein the storage apparatus includes a unit for improving performance of the storage apparatus, and wherein the message includes a suggestion of use of the unit for improving the performance of the storage apparatus.

14. The computer system management system according to claim 10, wherein the unit for deciding the threshold value includes a unit for deciding the threshold value according to information indicating a relationship between the parameter and the threshold value.

15. A computer system management system for managing a computer system including a storage apparatus,

wherein the computer system includes a management apparatus connected via a network or an interface to the storage apparatus, and

the management apparatus comprising:

a storage allocation section for creating a storage volume in the storage apparatus according to a parameter indicating a characteristic of the storage

volume;

a monitoring section for deciding a threshold value associated with performance information indicating performance of the storage volume according to the parameter;

a performance information acquisition section for acquiring performance information indicating the performance of the storage volume from the storage apparatus; and

a warning notification section for comparing the performance information to the threshold value, detecting whether a threshold value is violated, and notifying a warning when a threshold value violation is detected.

16. The computer management system according to claim 15, wherein the computer system comprises a computer for performing a read/write request to the storage apparatus.

17. The computer system management system for managing a computer system comprising a storage apparatus, wherein the storage apparatus comprises:

a storage allocation section for creating a storage volume in the storage apparatus according to a parameter indicating a characteristic of the storage volume;

a monitoring section for deciding a threshold value associated with performance information indicating performance of the storage volume according

to the parameter;

a performance information acquisition section for acquiring performance information indicating the performance of the storage volume from the storage apparatus; and

a warning notification section for comparing the performance information to the threshold value, detecting whether a threshold value is violated, and notifying a warning when a threshold value violation is detected.

18. The computer management system according to claim 17, wherein the computer system comprises a computer performing a read/write request to the storage apparatus.

19. The management apparatus for a computer system management system for managing a computer system comprising a storage apparatus, the management apparatus comprising:

a storage allocation section for creating a storage volume in the storage apparatus according to a parameter indicating a characteristic of the storage volume;

a monitoring section for deciding a threshold value associated with performance information indicating performance of the storage volume according to the parameter;

a performance information acquisition section for acquiring performance information indicating the

performance of the storage volume from the storage apparatus; and

a warning notification section for comparing the performance information to the threshold value, detecting whether a threshold value is violated, and notifying a warning when a threshold value violation is detected.

20. A storage apparatus for a computer system management system for managing a computer system comprising a storage apparatus, comprising:

a storage allocation section for creating a storage volume in the storage apparatus according to a parameter indicating a characteristic of the storage volume;

a monitoring section for deciding a threshold value associated with performance information indicating performance of the storage volume according to the parameter;

a performance information acquisition section for acquiring performance information indicating the performance of the storage volume from the storage apparatus; and

a warning notification section for comparing the performance information to the threshold value, detecting whether a threshold value is violated, and notifying a warning when a threshold value violation is detected.

21. A computer system management system for

managing a computer system including a storage apparatus, the system comprising:

- a unit for creating a storage volume in the storage apparatus according to a parameter indicating a characteristic of the storage volume;

- a unit for deciding a threshold value associated with performance information indicating performance of the storage volume;

- a unit for acquiring performance information indicating the performance of the storage volume of the storage apparatus; and

- a unit for comparing the performance information to the threshold value and detecting a threshold value violation, wherein:

 - a warning is notified when the threshold value violation is detected,

 - a message based on the parameter is added to the warning,

- the storage apparatus includes a unit for improving performance of the storage apparatus and the message includes a suggestion of use of the unit for improving the performance of the storage apparatus, and

- the unit for deciding the threshold value includes a unit for deciding the threshold value according to the information indicating relationship between the parameter and the threshold value.